New Electronic Device Permits 'Electromapping' of Heart: Page 2

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Medical Tribune

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Medical News

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world news of medicine and its practice—fast, accurate, complete

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Liver Toxicity Of Methotrexate Held Doubtful

Medical Tribune World Service

OSLO—Evidence that the abnormal liver findings seen in psoriasis patients treated with methotrexate are related to the disease rather than to the drug was presented here at the 19th meeting of the Nordic Dermatological Society.

Dr. Hugh Zachorine, of Marselishorg Hospital in Aarhus, Denmark, described 69 liver biopsies performed in 47 patients with psoriasis who were on treatment with methotrexate or considered for treatment.

When liver biopsies from 20 patients investigated before treatment were compared with those from 25 treated psoriatics, no significant differences were found. A high incidence of pathologic findings was observed in both groups.

Patients with psoriatic erythroderma showed the highest frequency of abnormal liver findings. Nine of 10 had increased fatty infiltration, and eight of 10 displayed signs of focal necrosis. The findings were not correlated with abuse of alcohol, obesity, or methotrexate therapy. No cases of cirrhosis were seen.

"It is suggested that pathologic liver biopsies in psoriatics may be related to the disease," he declared. "Long-lasting topical treatment or use of other drugs, however, could also contribute."

He said that 10 patients underwent two biopsies, three patients three biopsies, and two patients four biopsies, with an average interval of 10 months. These serial biopsies showed a mild tendency toward increased fatty acids. Patients treated for more than two years with methotrexate,

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Bubonic Plague In a 10-Year-Old First Since '70

Medical Tribune Report

ATLANTA, GA.—A case of bubonic plague in a 10-year-old Pendleton, Ore., boy was reported by the Center for Disease Control.

The boy noticed pain in his left groin when lifting a heavy object on August 5, the CDC said. The next day, he was admitted to a local hospital with fever and a painful, erythematous lesion in his groin. A 1-mm., flat, slightly hemorrhagic, non-indurated lesion was noted on his left great toe.

On admission, he was started on doxycycline, 100 mg. per day in two doses, which was continued until a surgical biopsy of the groin lesion was obtained on August 7. A purulent, necrotic lymph node was noted on biopsy, and the patient was given 500 mg. of cephaloridine intravenously and started on clindamycin 600 mg. orally per day in four doses.

On August 9, cultures of the biopsy material showed growth of gram-negative, bipolar rods. Plague was suspected, and

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Chinese Medicine Is Old, New, Eastern, Western

Medical practice today in China combines Western techniques with traditional, centuries-old methods. Above, group of health students test acupuncture on themselves.

Barefoot Doctors First Link In Massive Health Program

Medical Tribune World Service

CANTON, CHINA—"Barefoot doctors" are bringing medical aid to the 600,000,000 workers and peasants of China as the first step to what could become the world's most massive health care system. They provide the first link in a chain of medical aid that reaches from tiny rural villages to major hospitals having full general and specialist staffs in Peking and other main cities.

Barefoot doctors are, in fact, neither barefoot nor doctors. A cross between a first-aid worker and a district nurse, they run both rural and industrial medical services with what officials describe as diligence and frugality. Their work has gone far towards solving a problem that troubles many other countries to one degree or another—how to provide remote areas with adequate medical service.

The exact number of barefoot doctors is not made available by the authorities. Guesses range between 1,000,000 and 5,000,000 throughout the country, and a story in a Peking newspaper mentioning that 12,000 of them function in the area of the capital suggests that this estimate is probably correct.

As district health visitors, the barefoot doctors are able to dispense simple remedies and deal with simple fractures, burns, cuts, etc. Once they have been given medi-

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PHS Urges Rubella Vaccine Extension

Medical Tribune Report

ATLANTA, GA.—The desirability of extending programs of rubella vaccination in adolescent girls and adult women was emphasized in a revised recommendation by the United States Public Health Service Advisory Committee on Immunization Practices.

"Because of the precautions which must apply, potential vaccinees in these groups should be considered individually," the committee pointed out. "They should receive vaccine only if they are shown to be susceptible by serologic testing and if they agree to prevent pregnancy for two months after immunization."

The committee added: "To accomplish such extended use of rubella vaccine, serologic testing capabilities should be expanded."

The recommendation was described as a "logical step, the next phase" in rubella control by Dr. H. Bruce Dull, executive secretary of the committee. While the vaccination of children will continue, more community resources may now be directed to the task of immunizing adolescent girls and adult women.

Exercise Plan To Evade CHD May Be Danger

Medical Tribune Report

JACKSON, WYO.—Exercise programs for the prevention of coronary heart disease should be prescribed only as part of a broad preventive program, and stress electrocardiographic studies should always be carried out before exercise is recommended, the 31st annual Congress on Occupational Health of the American Medical Association was told here.

"Moderately strenuous exercise, taken as an isolated thing unto itself, probably provides no benefit and certainly exposes the patient to great risk," according to Dr. Brendan Phibbs, of the University of Arizona College of Medicine.

"There is no real point in forcing a tense, cigarette-smoking, overweight executive to jog a mile a day while he worries about the accountants and sees with resentment his life situation," he declared.

"You are likely to do much more harm than good; the man's circulating catecholamines are likely to reach astronomical levels; the diseased coronary artery that had not previously been manifested may find itself inadequate for the demands of the myocardium, and another death may be added to the already impressive total.

"On the other hand, if this executive

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Method Checks Cancer Drug Camptothecin and Derivatives

Medical Tribune Report

WASHINGTON—A computerized method of screening anticancer compounds is both quicker and cheaper than current laboratory screening and should aid in designing completely new classes of active compounds, the American Chemical Society was told at its 162nd national meeting here.

The method was applied to camptothecin—a naturally occurring anticancer compound of current interest—and some of its inactive derivatives by Robert L. Flurry, Ph.D., Professor of Chemistry at Louisiana State University.

The method permitted an explanation of the different activities of the compounds and a prediction of a new compound with activity similar to camptothecin's, Dr. Flurry said.

The method utilizes theoretic calculations that consider the distribution of electrons in molecules of the compound, he said. This distribution can explain most of the molecule's properties, including how reactive it is, the way it reacts, its solubility in water or oil, and its ability to penetrate the membrane of a cell.

DR. FLURRY

There was only one property, Dr. Flurry said, that could explain camptothecin's activity against cancer and its derivatives' inactivity—the value and direction of the dipole moment, a measure of unequal electron distribution in a molecule. This property was significantly lower in camptothecin than in the derivatives, suggesting that camptothecin can penetrate more readily into the cell.

A new compound, consisting of camptothecin molecules with one segment removed, was calculated to have close to the same properties as camptothecin itself and is predicted to have similar activity. It is currently being synthesized by a cooperati-

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Electromap Gauges Thoracic Areas, Converts Data to Electric Impulses

Medical Tribune World Service

MILAN, ITALY—A new electronic device that its inventors claim is opening "new horizons" in heart disease research has been developed here by the Simes Institute of Experimental Cardiology.

The device automatically measures 240 points of the thoracic surface and converts the information every two milliseconds into electric impulses. An on-line computer translates the information into figures or directly prints an "electromap" of the heart.

Prof. Bruno Taccardi, director of the electrophysiologic laboratory of the institute, said that experiments in both animals and human beings have proved the value of the device.

"Recent investigations carried out in this laboratory and in other research centers have shown that electromaps, which illustrate the instantaneous distribution of cardiac potentials on the body surface, yield more information on the electrical activity of the heart than can be obtained from the conventional electrocardiogram," he said.

Clinical Applications Limited

Although clinical applications of the device are still limited, Professor Taccardi said, chest maps have provided information of diagnostic value in one case of myocardial infarction that was not detected by an electrocardiogram and in several cases of coronary heart disease, right-ventricular hypertrophy, Wolff-Parkinson-White syndrome, and other heart disorders.

As part of the method, electrocardiograms are recorded on the anterior and posterior surface of the trunk in groups of four tracings at a time, using a multibeam cathode-ray oscilloscope. A reference electrocardiogram, generally the VR lead, is recorded, together with each group of chest electrocardiograms.

The amplitude of each tracing is measured during ventricular activation and recovery. The amplitudes are converted into potential values and plotted on maps of the area explored. A map is thus built up drawn by equipotential lines.

Professor Taccardi noted that in heart disease a normal electrocardiogram sometimes leads to diagnostic problems and is mute in the presence of suspected clinical symptoms. In other cases, hypertrophic sections are found in certain individual parts of the heart that are extremely difficult to determine.

"In all these situations, and others that are too long to list, the electromap heart method promises results of major interest," he said, "primarily because of its ability to supply an extremely detailed analysis in time and space of the actions of electrocardiac phenomena."

Professor Taccardi noted that the device is almost as rapid as the standard electrocardiogram in application.

But he cautioned that it will not necessarily replace the electrocardiogram in routine diagnosis.

"The areas of use are different," he said. "The analysis of the electromaps," he continued, "will be applied in a large number of subjects, normal or pathological, in the various conditions of cardiac activity. This will establish the standard characteristics of various situations and their limits of variability."

The study, to be conducted in cooperation with various universities and hospitals, will produce much more precise information on the electric activity of the heart, he said, and is expected to solve certain problems related to final clinical applications of the new method.

Medical Fees in New Guinea High at Two Pigs a Visit

Medical Tribune World Service

SYDNEY, AUSTRALIA—Churchmen and medical workers in New Guinea have called for a thorough investigation of the practice of witchcraft on the island, it was reported here. Missionaries say that more sorcery is practiced there than modern medicine.

So strong is the grip of the witch doctors that they often accompany patients into government hospitals to continue their treatment. Fees are high—as much as two pigs per consultation, according to the natives.

Cancer Research in U.S.S.R.

WHO Photo

Investigators, above, at Cancer Research Institute, Moscow, study the immunology of spontaneous tumors occurring in dogs. At nearby Gamaleja Institute, a group of researchers have made significant contributions to knowledge of cancer of the liver.

Contact Interviews 'Only Hope' as Curb In World VD Spread

Medical Tribune World Service

WARSAW—The delicate and difficult work of contact investigation offers the only hope for controlling the world-wide spread of venereal diseases, Dr. Thorstein Guthe, of the World Health Organization, declared here at an eight-nation round-table discussion organized by the International Union against Venereal Disease and Treponematoses.

"We do not have in view for the foreseeable future immunogenic agents which can help us toward vaccination," said Dr. Guthe, chief WHO medical officer for venereal disease and treponematoses. "We must therefore improve our methods and improve our indices by obtaining more contact interviewers trained for the purpose.

"For this, funds are needed by central and local health authorities to provide the only means whereby we can envisage handling the problem successfully."

"Common Market" of VD

Referring to a comment by Prof. Axel Perdrup of Copenhagen that more than 50 per cent of Denmark's VD cases came from abroad, Dr. Guthe stressed the need to recognize that there is a "common market" in venereal diseases.

"Let us keep this common market in mind," he said, "because the intercountry spread complicates the fight for all of us when it comes to contact tracing and case finding."

France and Sweden are cooperating in a joint pilot project to determine whether simplification of reporting procedures and the cutting of administrative red tape will improve the cooperation of physicians with public health authorities, it was reported by Dr. Pierre Durel, secretary-general of the French National League Against Venereal Diseases.

Identical Methods Tried

In this project, the Swedish departments of Jämtland and Västmanland have been paired with the Vaucluse in France for a trial of identical medical, epidemiologic, and administrative methods in VD control. The experiment is based on a new Swedish law concerning a wide range of communicable diseases.

Polish participants reported that mass serologic screening disclosed a syphilis incidence ranging from 0.06 to 0.15 per cent in such groups as voluntary blood donors; military conscripts, pregnant women, and transport workers. The highest rate, 2.5 per cent, was discovered among prison inmates.

Commenting on these findings, Dr. Guthe said it is likely that mass screening, however cumbersome, will probably have to be employed more widely in the future. He noted that automation of the Treponema pallidum hemagglutination test appears to show promise.

Phlebography Found to Pinpoint Thrombi Post Mortem

Medical Tribune World Service

COPENHAGEN—Postmortem clarification of the frequency, localization, and extension of thrombi in a geriatric clientele has been obtained by intraosseous phlebography with contrast medium injected into the calcaneus.

Dr. Lennart Diener, of the radiologic department of the Karolinska Hospital, Stockholm, told the 13th annual meeting of the International College of Angiology here that the method could possibly replace dissection to some degree and complement autopsy in more complete studies of the leg veins.

"The method can also be of interest in countries which are more restrictive concerning autopsy," he added.

The body is placed on a tilt table and fastened with a belt across the chest, he explained. The body is then brought to a semivertical feet-down position so that the heavy contrast medium can fill the veins from below without layering phenomena.

As contrast medium, Dr. Diener uses 0.1 Gm., barium sulfate per ml. of suspension. When injected into the calcaneus, it passes directly into the deep veins of the leg without filling the superficial venous system.

He reported having performed postmortem phlebography as well as complete dissection of leg veins to the malleoli in 400 autopsies.

By increasing the amount of injected contrast medium, the phlebography could be extended to include the caval system and the abdominal and possibly thoracic vessels, said Dr. Diener.

Japan Government Reimburses For Pollution-Linked Ailments

Medical Tribune World Service

TOKYO—The Japanese Government has appropriated 74,370,000 yen ($206,580) as compensation for persons suffering from pollution-related ailments in 1971.

Buichi Oishi, director general of the Environmental Agency, said that 3,993 persons are being aided this year and that the agency is planning a stepped-up aid budget next year.

Currently, patients whose ailments have been traced to air pollution receive a 2,000-yen ($5.55) allowance for commuting to hospital between three and 15 days a month and an allowance of 3,000 yen ($8.33) if the hospital trips take up more than 15 days a month. Similar allowances are made to victims of water pollution.

Meanwhile, authorities in the industrial city of Tokai, south of Nagoya, have begun a program of free medical care for all patients suffering from pollution-inspired respiratory diseases. The measure is the first of its kind ever instituted in Japan and covers patients suffering from chronic bronchitis, bronchial asthma, asthmatic bronchitis, and pulmonary emphysema.

NEWS INDEX

CLINICAL NEWS NOTE: "With regard to reducing the seriousness of injuries to the lower extremities, particularly the knee, it is recommended that football players be outfitted with low shoes and some form of disk or flat heels or short cleats." (Dr. William T. Callahan; see Sports Report, page 23.)

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Year-Old Kansas Abortion Law Not Without Legal Problems

Medical Tribune Report

KANSAS CITY, KANS.—The first year of operation of a liberalized Kansas abortion law has resulted in more legal than surgical complications.

Although no maternal deaths were attributed to the 8,549 therapeutic abortions performed in the state, health officials realized too late that 2,400 of the procedures were performed in violation of statutory requirements.

Kansas law says that a therapeutic abortion must take place in a hospital "licensed by the State Board of Health and accredited by the Joint Commission on Accreditation of Hospitals."

The statistics, however, showed that Holton City Hospital, Decatur County Hospital, Lindsborg Community Hospital, and, in this city, Douglass Hospital performed abortions while not being J.C.A.H.-accredited. Douglass, a 50-bed institution, accounted for almost all—2,395—of the illegal operations.

The Board of Health turned over the matter to the State Attorney General's office for investigation. Under the abortion statute, violators could be charged with a class D felony, which carries a sentence of one to 10 years in the state penitentiary and a fine up to $5,000.

Meanwhile, some Kansas physicians and legislators expressed concern over the first year's abortion tally, which they said is twice as high as was predicted when the law was passed. Dr. Francis Bice of Wakeeney, health board member, commented that the "sickening" total should show legislators "how much a bunch of damn fools they were to pass such a law."

10-Day Ban Declared

At the University of Kansas Medical Center, Dr. William O. Ricke, who became vice-chancellor of medical affairs in July, declared a 10-day ban on abortions August 20. He explained that it was in accordance with a general hospital directive limiting all elective surgery procedures through August 30 because of a nursing shortage.

Dr. Ricke admitted in an interview, however, that the ban was also instituted so that he could "verify that all our procedures are done under the best conditions."

He noted that therapeutic abortion is an emotional political issue in Kansas at this time and added: "I don't think people appreciate the hot spot I'm sitting in." The medical center staff performed about 2,200 of the state's therapeutic abortions last year.

The medical center's administration already had decided to omit any reference to abortion in the Hippocratic Oath administered to medical students graduating this year.

After a special meeting with Dr. Kermit Krantz, chief of the obstetrics and gynecology department, and other department personnel, Dr. Ricke issued a statement saying, "I have every assurance that the letter and spirit of Kansas law have been met in the past and will be in the future," and removed the general ban on abortions after August 30.

According to the first year's statistics on Kansas therapeutic abortions, 88.8 per cent were performed to preserve the mother's mental health; 85.8 per cent were performed during the first trimester of pregnancy, and the majority of the women undergoing the operations were 18 to 22 years old, unmarried 173.6 per cent), and white 189.4 per cent), and spent one day in the hospital.

Statistics Not Alarming

Dr. Edwin Lyman, executive director of the Board of Health, said that for the most part the statistics were not alarming nor did they seem out of line.

"I have nothing to compare with," Dr. Lyman commented. "This is our first year of experience. I can state that the law has not altered significantly the state's birth rate—there was no abrupt drop in births. This indicates to me that the number of abortions that used to be carried out illegally in the state just about equaled the number carried out legally last year."

With regard to the fact that more out-of-state residents 15,3051 obtained abortions than Kansans 13,244), Dr. Lyman observed that the majority of the operations were performed in Kansas City, Kans., which is just across the street from Kansas City, Mo., where abortions are still illegal under most circumstances.

Australian MDs Now Call Sterilization Ethical

Medical Tribune World Service

SYDNEY, AUSTRALIA—The Australian Medical Association has abolished its ethical restriction on operations for the sterilization of man and woman.

The restriction was described as "a 19th-century provision" by Dr. J. R. Magarey, a member of the A.M.A. Federal Council, who proposed that the Federal Assembly abolish it. The assembly voted by a large majority to delete from the A.M.A.'s code of ethics a paragraph disapproving of sterilization unless for therapeutic reasons.

Only 2% Loss Seen With New Technique Of Red Cell Thawing

Medical Tribune Report
Washington Bureau

WASHINGTON—An improved technique of thawing freeze-preserved washed erythrocytes damages only 2 per cent, compared with 25 per cent previously, it was reported here.

The technique, developed by Dr. Harold T. Meryman, associate research director of the American Red Cross blood program, for thawing the red cells, makes use of a glucose-saline solution passing through the red cells during centrifugation to wash out the glycerol added before freezing.

One of the most important benefits of freeze preservation is that the erythrocytes emerge free of hepatitis, Dr. Meryman observed at a press conference held during the annual meeting of the Society for Cryobiology.

"No confirmed reports of hepatitis being transmitted through transfusion of frozen red cells have appeared," he said.

In Dr. Meryman's technique, the glycerol that is used to prevent ice formation during freezing is removed during thawing by passing a glucose-saline solution through the red cells while they are being centrifuged. The process takes about 30 minutes.

DR. MERYMAN

Dr. Meryman said that a freezing method developed five years ago by Dr. Charles Huggins, of Massachusetts General Hospital, causes a loss of about 25 per cent of the red blood cells.

Red Cross officials predicted that by the end of this year 50,000 units of frozen washed blood will be available and that 18 regional centers will be in a position to process 100,000 units of frozen blood a year.

The cost of processing the frozen cells, $37 a pint, compared with $12 for regular donated blood, will be a limiting factor in their availability, they noted.

In addition to the Boston and Washington, D.C., centers, the A.R.C. is sending freezing machinery to blood banks in Atlanta, Ga.; Birmingham, Ala.; Nashville, Tenn.; Charlotte, N.C.; Cleveland; Columbus, Ohio; Detroit; St. Louis; Albany and Rochester N.Y.; Los Angeles; Portland Ore.; Tucson, Ariz.; St. Paul; Lansing, Mich.; and Hartford, Conn.

International Headache Symposium

By DONALD J. DALESSIO, M.D.
Head, Division of Neurology, Scripps Clinic and Research Foundation, La Jolla, Calif.

THE AUTHOR, recently returned from the International Headache Symposium held in Elsinore, Denmark, should confess that he was one of the organizers of the conference—hence what follows cannot be said to be an entirely objective critique.

Several entirely new observations were reported at the meeting. G. W. Bruyn of the Netherlands found that patients with migraine have elevated blood ammonia levels of significance. In 12 normal controls he found that the plasma ammonia ranged from 21 to 63 micrograms/100 ml. with a mean of 40 micrograms/100 ml. In 22 patients with migraine, the levels ranged from 39 to 390 micrograms/100 ml., with a mean of 103 micrograms/100 ml. These patients did not have liver disease. This important observation requires confirmation and further biochemical investigation, but it may provide another clue to a dietary abnormality producing headache, related to a resting hyperammonemia. Should this prove to be the case, some form of protein restriction in the diet might be advisable for susceptible patients with migraine.

Federigo Sicuteri of Florence, Italy, from whose laboratories many of the recent clues to migraine and its treatment have come, presented data relating hypertension and migraine to a common enzymatic deficiency, reduced monamine oxidase. He found a relative deficiency of monamine oxidase in the liver biopsies of hypertensive subjects and in the platelets of patients with migraine, where it was reduced by one-half. A possible link between these diseases is a logical consequence of this finding.

C. NORMAN SHEALY, of the Gundersen Clinic, Wisconsin, presented data on the concept of dorsal column stimulation for the relief of chronic pain. He introduced this idea in 1966 and shortly thereafter, on the basis of his work, he was awarded the first Harold G. Wolff Prize, given by the American Association for the Study of Headache. His method of treatment is based on raising the pain threshold by placing a bipolar stimulating electrode inside the dura at some level of the spine well above the point of pain input. The patient then controls the amount of dorsal column stimulation by means of an electrical device which he carries in his pocket.

Shealy reported on 15 patients followed for a minimum of six months. In 75 per cent of whom dorsal column stimulation was effective in the relief of organic pain. The significance of this work cannot be overemphasized. It relates neurophysiology to the particularly difficult and pernicious clinical problem of chronic pain. Furthermore, and perhaps more important, it shifts the emphasis for pain relief from ablation to stimulation, or from a basically destructive lesion to one wherein symptoms are controlled without altering normal physiological function.

Owen and his colleagues of Basel, Switzerland, presented interesting studies on the influence of ergotamine and methysergide in the storage of biogenic amines.

Treatment of rats with methysergide produced a protective influence against the serotonin-depleting activity of reserpine. Similar protection could not be produced with ergotamine. Lance of Australia has demonstrated reduced platelet serotonin levels prior to a migraine episode. Thus the protective effects of methysergide mentioned above may relate to its use in the prophylaxis of migraine.

Several physiologic studies were presented which demonstrated again that in the prodromal phase of migraine, a reduction in cerebral blood flow occurs, at times to levels critical for adequate oxygenation of the brain. Skinhoj of Copenhagen, using intracarotid radioactive xenon injections for determination of regional cerebral blood flow, has found that there is diminished local cerebral blood flow of great significance in the prodromal phase of migraine. Thereafter, during the headache phase, a luxury perfusion state occurs, associated with intracerebral acidosis, as would be expected if the initial cerebral ischemia were severe. O'Brien of Newcastle upon Tyne, England, finds that the changes measured by radioactive techniques in the prodromal phase of migraine are widespread and bilateral, and not necessarily related to localized aural symptoms.

G. S. Barolin of Austria, presenting the Harold G. Wolff Lecture, reviewed his experience with electroencephalographic findings in migraine. F. G. Silman of Jerusalem offered the first paper in this author's recent memory relating disease state to climate. The hot, dry winds of Israel may produce headache in sensitive subjects. In 70 of 80 patients so affected, there was an increased urinary serotonin excretion associated with the heat stress.

What was new in therapeutics? The English reported on their further trials with clonidine, an antihypertensive drug which also reduces vasomotor activity and which shows promise of being a useful agent in migraine prophylaxis. Dr. Marsha Wilkinson of London presented data to show that persons subject to headache after ingestion of tyramine are most likely to benefit from chronic therapy with clonidine. Also, several papers from different areas of Europe and Israel reported on the prophylactic effects of BC-105, which has proved effective in reducing the frequency and intensity of vascular headache and has some antidepressant properties.

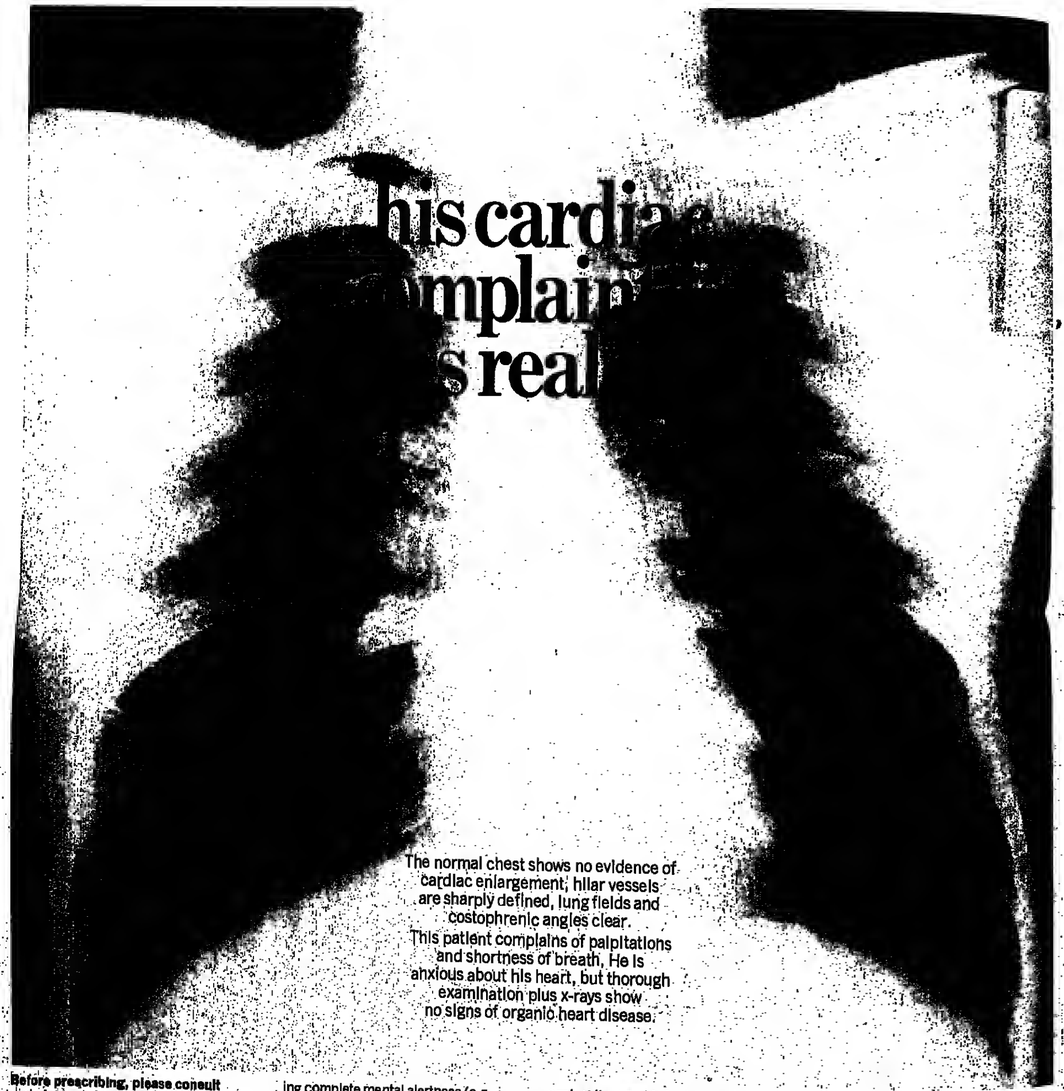
Papers on clinical pharmacology were lacking from the large U.S. group present. It seems evident that clinical research on new drugs in this country is fast becoming an obsolete and occult pursuit. One might observe that we have come full cycle and that pressures from the Food and Drug Administration, combined with the ever-present threat of malpractice suits, have served to make clinical pharmacology an exercise for those in other lands, who practice medicine in less antagonistic circumstances.

Outpatient Care on Rise

CHICAGO—For every patient admitted to a hospital in 1970, there were 5.7 outpatient visits, reports the American Hospital Association. Ambulatory care continues to be the fastest-growing service in the nation's hospitals.

In 1970 the 7,123 hospitals registered by the American Hospital Association reported a total of 181,400,000 outpatient visits, for an increase of 11.1 per cent over 1969.

Anxiety—frequent cause of cardiac complaints or concomitant of cardiac symptoms. Cardiac complaints may be signals of underlying anxiety or of organic cardiac disease. In either case, anxiety of varying severity often plays a prominent role in provoking functional complaints or complicating organic disease. Thus, whenever excessive anxiety is a significant component of the clinical profile, adjunctive use of Librium (chlordiazepoxide HCl) may be of value.



his cardi… …mplai… …s rea…

The normal chest shows no evidence of cardiac enlargement; hilar vessels are sharply defined, lung fields and costophrenic angles clear.

This patient complains of palpitations and shortness of breath. He is anxious about his heart, but thorough examination plus x-rays show no signs of organic heart disease.

his

The heart is enlarged, the hilar vessels are engorged, and the bronchovascular markings accentuated. There are bilateral pleural effusions.

This patient complains of the same symptoms—palpitations and shortness of breath. He is concerned that he may have heart disease, and thorough examination plus x-rays justify his high level of anxiety.

Librium (chlordiazepoxido HCl) is used concomilantly with certain specific medications of other classes of drugs, such as cardiac glycosides, diuretics and antihyperlensive agents.

Librium (chlordiazepoxide HCl) is especially well suited for extended use because of its wide margin of safety. In general use, the most common side effects reported have been drowsiness, ataxia and confusion, particularly in the elderly and debilitated. (See summary of prescribing information.) Moreover, the anti-anxiety benefits of Librium are generally maintained without diminution of effect or need for increase in dosage. When treatment is prolonged, periodic blood counts and liver function tests are advisable. **Three dosage strengths are available** for flexible, individualized therapy of various degrees of excessive anxiety in patients with functional or organic heart disorders.

ROCHE

Roche Laboratories
Division of Hoffmann-La Roche Inc
Nutley, N.J. 07110

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Indicated when anxiety, tension and apprehension are significant components of the clinical profile.

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Supplied: Capsules containing 5 mg, 10 mg or 25 mg chlordiazepoxide HCl.

For relief of moderate to severe anxiety associated with cardiovascular symptoms

adjunctive

Librium® 10 mg

(chlordiazepoxide HCl)

1 or 2 capsules

t.i.d./q.i.d.

Ingestions of Inedible Items Often Unreported

Medical Tribune Report

ATLANTIC CITY, N.J.—Children under five annually ingest an estimated 3,000,000 inedible products that "may or may not produce symptoms," according to Dr. Howard C. Mofenson, president of the American Association of Poison Control Centers.

Of these ingestions, only one in 50 is reported to an appropriate poison control center, he told the Section on Pediatrics at the 120th Annual Convention of the American Medical Association. Failure to report means the loss of valuable information on the toxicity, or lack of it, of swallowed objects, the majority of which are probably innocuous, he said; and the lack of this information on human toxicity means that "much of our knowledge must be based on the vague, variable LD_{50} of animals."

He suggested that when an ingestion is reported, the first thing to do is to get the victim's telephone number and the exact spelling of the ingested object or substance, since package labels sometimes provide a clue to toxicity if they include one of the signal words: "Caution," "Warning," or "Danger." He also encouraged the reporting of all ingestions.

To considerations of toxicity must be added an estimate of the volume swallowed by the youngster and of the emetic properties of the ingested substance.

"Since rodents are customarily used to determine the LD_{50} and rodents do not vomit, this defense mechanism of humans has been overlooked when comparing rodent LD_{50} to human toxicity," he said.

His presentation included a table of "Frequently Ingested Common Household Items" (see boxes) divided into those that are usually nontoxic and those that sometimes are, if taken in large amounts or deliberately. The nontoxic ones far outnumber the toxic ones.

Dr. Mofenson listed as nontoxic such items as batteries, cigars and cigarettes, detergents (except those for electric dishwashers), inks, contraceptive pills, Silly Putty, deodorants, thermometers (except for a small danger from broken glass), and many others.

His coauthor was Dr. Joseph Greensher, director of the Poison Control Center at the Nassau County Medical Center, N.Y.

Frequently Ingested Common Household Items

A. Nontoxic *(usually)*

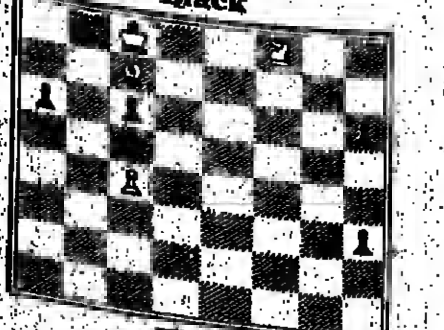
Adhesives *(most)*
Ballpoint pen inks
Bathtub floating toys
Battery *(dry-cell)* *(1/5 MLD of mercury chloride)*
Bubble-bath soaps *(detergents)*
Candles *(beeswax or paraffin)*
Caps *(toy pistol)* *(potassium chlorate)*
Chalk *(calcium carbonate)*
Cigarettes or cigars *(nicotine)*
Cosmetics *(most)*
Contraceptive pills
Crayons *(marked A.P., C.P.)*
Dehumidifying packets *(silica or charcoal)*
Detergents *(most—not electric dishwasher)*
Deodorants
Fish bowl additives
Golf ball *(fluid core can cause mechanical injury)*
Ink *(blue, black)*
Ipecac syrup
Matches *(potassium chlorate)*
Mucilage and paste
Paint—indoor *(less than 1 per cent lead)*
Pencil—*(lead-graphite and coloring)*
Play-Doh and modeling clays
Polaroid picture-coating fluid
Porous-tip ink-marking devices *(felt-tip markers)*
Putty *(less 2-3 ounces)*
Sachets *(essential oils and powder)*
Shampoos *(liquid)*
Shaving creams *(soap, perfume, menthol)*
Silly Putty *(silicones and 1 per cent boric acid)*
Soaps *(may cause vomiting)*
Sweetening agents *(saccharin, cyclamate)*
Teething rings *(water—? sterility)*
Thermometer *(mercury)*
Tooth paste
Vitamins with or without fluoride
Writing ink *(blue, black)* *(ferrous sulfate, tannic acid, gallic acid)*

B. Sometimes Toxic *(in large amounts or if taken deliberately)*

PRODUCT	TOXIC INGREDIENT	TOXICITY
Aerosol spray	Freon	Myocardial sensitization
Aftershave lotions	Alcohol	Hypoglycemia, intoxication
Airplane glue	Toluene	Glue sniffing
Alcohol drinks	Ethyl alcohol	Hypoglycemia
Antiseptics	Hexachlorophene 3 per cent over 1 ounce	GI irritation
	Mercurochrome	Relatively nontoxic
	Merthiolate	Relatively nontoxic
Bleach *(household)*	Sodium hypochlorite	Esophageal & GI irritation
Bleach—mixed with bowl cleaner or ammonia	Chlorine	Pulmonary irritation
Body conditioners	Alcohol	Hypoglycemia, intoxication
Candy laxatives	Phenolphthalein	Enteritis
Colognes	Alcohol	Hypoglycemia, intoxication
Deodorizer cakes	p-Dichlorobenzene or naphthalene	More than 1 teaspoonful
Model cement	Toluene	Glue sniffing
Nail Polish remover	Acetone	GI irritation and CNS depression
Plastic cement	Toluene	Glue sniffing
Suntan preparations	Alcohol	Hypoglycemia, intoxication
Talc	Magnesium silicate	Aspiration pneumonia

Chess Problem

Black



White

White to play and win, but how is that QRP to be stopped? See page 16.

Applications Are Sought For Cancer Study Grants

Medical Tribune Report

BETHESDA, MD.—The National Cancer Institute today issued a call for construction grant applications from nonprofit research institutions throughout the country. The deadline is November 1. Applications will be given final review and recommendation by the National Advisory Cancer Council, and applicants will be notified of the results by April, 1972.

The institute has allocated $11,000,000 for construction grants from the $100,000,000 supplemental appropriation it received from Congress at President Nixon's request in support of his call for a national commitment for the conquest of cancer.

The Federal grants will provide 75 per cent of construction cost, the remainder to be given locally.

To be eligible for a grant an institution must be actively engaged in cancer research of high quality, the National Cancer Institute announcement said.

Information on the procedure for grant applications is available from the Associate Director for Extramural Activities, National Cancer Institute, Bethesda, Md. 20014.

Age-Linked Immunologic Fall-Off Studied

Medical Tribune Report

WASHINGTON—There seems to be no doubt that the immune competence of some mammals decreases with age. But can the same be said for an entire species? And is the decrease a causal factor in some age-related diseases, not to mention senescence itself?

"For most questions of that kind the data is so sketchy as to be no answer," said the chairman of a workshop on the subject at the first International Congress of Immunology.

Dr. Roy L. Walford, of the University of California at Los Angeles, said that even the solid experimental evidence for immunologic dwindling with age is confronted by "a paradox . . . in that a number of immunosuppressive regimens prolong life span."

Notable among these paradoxical examples are some of his own experiments with small fish, which can be made to live 50 to 100 per cent longer lives by keeping them in water 4 to 5° C. colder than normal. Although they grow faster and larger than normal their immunologic functions are suppressed, he said, judging from prolonged scale graft rejection times and response to standard antigens, such as sheep erythrocytes.

Calorie restriction accomplishes a similar life-lengthening and immune suppression in mice, according to Dr. Walford. The odd aspect of that experiment is that the mice were from a cancer-prone strain and a two-thirds reduction in calories from the time of weaning reduced their tumor incidence from the usual 60 per cent to 10 per cent. What is odd about it is that the reduction of an immunologic surveillance mechanism, particularly with aging, is customarily regarded as an invitation for a tumor "take," while in this case it seemed to prevent a tumor take.

Immune Fall-Off Documented

Aside from the paradoxes accompanying regimen-induced immunosuppression, however, there are some clear-cut examples of immune fall-off with age. Morphologically the thymus shows no involution to an extent that no other organ does with age.

Experiments reported by other investigators at the workshop here added to previous evidence that humoral immunity declines, sometimes qualitatively as well as quantitatively. A rodent, for instance, often is less able to mount a humoral antibody response to standard antigens as it ages—and those antibodies it does produce are shifted in proportion between IgM and IgG globulins.

Data on cellular immunity are less broadly based, said Dr. Walford, and tend to be "very strain-dependent." A strain of mice susceptible to autoimmune disease undergoes a marked decline in immune function with age—e.g., between the 16th and 24th month of life but not sooner. Another strain not susceptible to autoimmune disease shows no subsidence of immune function by the 21st month but no data are known for greater ages or in longer-lived strains.

Some other phenomena attributable largely to cellular immune mechanisms are related to age in some strains but not all. Skin, tumor, or other allografts may survive longer in older animals, and some of the cells from older animals show decreased ability to mount a graft-versus-host reaction.

In sum, said Dr. Walford, "age-related alterations in the immune mechanisms must be complex and not merely a quantitative falling-off."

Medicine on Stamps

BY DR. JOSEPH KLER

HONORED BY URUGUAY as a bishop, physician, writer, and naturalist, Damaso A. Larranaga (1771-1848) was a scion of a wealthy family.

In exile in Buenos Aires for political views, Dr. Larranaga provided medical services during the Spanish invasion of the city. He returned to Uruguay following its independence. Stamp was issued in 1921.

Courtesy Minkus Publications, Inc., New York

Committee Finds No Data to Back Anticancer Agent

Medical Tribune Report
Washington Bureau

WASHINGTON—An ad hoc committee of oncology consultants for review and evaluation of Laetrile (amygdalin MF) told FDA Commissioner Dr. Charles Edwards "there is presently no acceptable evidence of therapeutic effect" of the controversial anticancer drug.

Further, the committee said, there is "no justification at present" for the clinical trials proposed by the McNaughton Foundation of California.

Laetrile—a compound derived from apricot kernels—has been widely promoted in the United States and other countries, including West Germany and Mexico, as a cancer remedy. The promoters have attempted several times during the past 30 years to gain Food and Drug Administration approval for use of the drug in tests on human beings.

Committee Named Last May

The ad hoc committee was appointed by the FDA last May 21, with Dr. Albert Segaloff, of the Alton Ochsner Foundation, as chairman. The group found that data in the present file do not fulfill minimal requirements for a decision with respect to human efficacy. It said it would welcome the opportunity to review material on human efficacy.

FDA said that it has asked Dr. Ernesto Contreras of Mexico and Dr. Hans Nieper of West Germany, two physicians with Laetrile experience, to provide the agency with results of their tests.

Referring to reports of success with the drug in patients in various clinics, the committee commented that "a favorable clinical experience may supply the justification for the initiation of a clinical trial but cannot substitute for a properly controlled clinical trial."

According to FDA policy reinforced by the ad hoc committee findings, Laetrile may not be promoted, tested, or sold in the U.S. under provisions of the Food, Drug and Cosmetic Act until necessary basic studies have been performed.

EPIGRAMS—Clinical and Otherwise

The cure of many diseases is unknown to the physicians of Hellas, because they are ignorant of the whole, which ought to be studied also; for the part can never be well unless the whole is well. . . . This . . . is the great error of our day in the treatment of the human body, that the physicians separate the soul from the body.

Plato (427?-347 B.C.)
Charmides, 156.B (tr. by Benjamin Jowett)

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"One teaspoonfull to be taken every full moon —and keep it out of reach of the children."

De Motu Cordis Updated

HARVEY'S GREAT DISCOVERY was the circulation of the blood, but his classic book is titled *De Motu Cordis*—i.e., "motion of the heart." Necessarily relying on direct observation, Harvey studied the heart beating in "very little Fish...all the body of which is transparent," in chick embryos placed in warm water, and in mammalian dissections. That is at least one order of magnitude removed from the array of modern techniques applied to investigate the movements of the heart and blood.

The very names of current investigative methods are formidable—e.g., videoscintiscopic radioisotope angiocardiography, radiokymography, biplane cineangiography, echocardiography, kinetocardiography, apex cardiography, electrokymography, roentgenkymography. Some of the newer procedures appear most promising.

Radioisotopic angiocardiography, developed by Dr. Joseph P. Kriss and colleagues at the Division of Nuclear Medicine of Stanford University, is particularly intriguing. As far as the patient is concerned, all that is required is the intravenous injection of a few cubic centimeters of technetium^{99m}-pertechnetate. The course of the injected radionuclide through the great vessels and chambers of the heart is followed in precise detail by a scintillation camera and a variable time-lapse videoscintiscope, permitting recording, display, replay, and photography of cardiovascular morphology.

As described by Dr. Kriss and his colleagues in a detailed article in the June issue of *Circulation*, the procedure has a very broad scope of diagnostic applicability in heart disease, including congenital heart and valvular lesions, ventricular and aortic aneurysms, ventricular hypertrophy and cardiomyopathies, and pericardial effusion. The method has permitted the quantitative assessment of such hemodynamic functions as cardiac output, chamber size, and blood flow as reflected by transit times; and quantitation appears feasible also of intracardiac shunts, myocardial contractility, and coronary blood flow. Contrast angiocardiography and cardiac catheterization, which are widely employed in diagnostic study of the heart, are both "invasive" techniques with inconvenience and some hazard to the patient. The particular virtue of radioisotopic angiocardiography is its simplicity in addition to its versatility.

Cardiac diagnosis has come a long way from palpation, auscultation, and the long-familiar techniques of fluoroscopy and electrocardiography, although, combined with a good history, these still suffice in most patients. Harvey would doubtless have been much intrigued to see how far *De Motu Cordis* has come since his observations on transparent "little Fish."

Congratulations to the FDA

THE FOOD AND DRUG ADMINISTRATION should be commended for its choice of Peter Barton Hutt as chief counsel. Mr. Hutt comes to the agency with a decade of intensive experience in Food and Drug law, specializing in this area during his years with a leading Washington law firm as chairman of the American Bar Association's Food and Drug Law Committee, and as a member of the Advisory Lawyers Committee to the Food and Drug Law Institute. It is, however, not only technical excellence that Mr. Hutt brings to his new tasks but practicality, liberalism, and humanitarianism as well. His years of working with Senators and Representatives in the drafting of health-related legislation, mostly behind the scenes, have given him practical knowledge of the vagaries of politics. His concern with substance abuse has been long and lasting, he being the first lawyer in the country to establish in the courts the principle that the alcoholic is sick and should not be the subject of criminal law. Lastly, and perhaps most important as he takes office, Mr. Hutt has always been a believer in the Constitutional guarantee of basic rights for the individual, the right of the doctor to practice medicine with pride and freedom, and the right of both to live and work without mortal fear of government interference and reprisal. Dr. Walter Modell once wrote, "There is also a strong possibility that in the future, physicians will be frightened into using token dosage and treat patients in ways designed to assuage the FDA, rather than the disease." In commenting on this statement, Peter Barton Hutt wrote simply, "One would hope that this could be avoided."

We wish him well.

"Induced Traffic"

CLINICAL QUOTE: "Another facet of automatic sampling and analyzing of blood gases and pH can well be what traffic engineers refer to as 'induced traffic'—i.e., the traffic not originally needing to use a new route but attracted by it. Until the result is known to be normal, who is to say that just one more determination might not be useful? In one of the patients described 349 determinations were done, possibly all justified to test the apparatus but inconceivably all useful to the patient! And if the hospital billing system were hooked into the same computer, the 349 tests could add approximately $5,800 to the patient's bill." (Charles D. Cook, M.D., Automated Blood Analysis: Success or Excess? *Pediatrics 48:1, July, 1971.*)

Letters to Tribune

Diabetes Controversy—Continued

Editor, MEDICAL TRIBUNE:

It is my belief that the controversial report of the University Group Diabetes Program relative to the alleged acceleration of cardiovascular complications in adult-onset diabetics receiving tolbutamide—and presumably all related sulfonylurea compounds—can be better understood in the light of a basic issue. This concerns the role of the hyperinsulinized-diabetic state in the pathogenesis of ischemic (coronary) heart disease....

I have repeatedly stressed that the onset of angina pectoris or cardiac arrhythmias three or more hours after eating, especially during the night, is a hallmark of myocardial glucopenia, whether coronary occlusion is or is not demonstrable....

My review of the U.G.D.P. report warrants pointing out the following observations:

1. The greatest patient cooperativeness relative to taking 1.5 Gm. tolbutamide daily ("highest level of adherence to study medication") was in the tolbutamide-treated group. Specifically, 74 per cent in this group took all of their study medication for at least 75 per cent of the follow-up periods during which they were under study. The corresponding percentages for the placebo and insulin groups only ranged from 45.3 per cent to 69.8 per cent.

2. There was less hypoglycemia in the insulin-treated groups due to the unequivocal modification of the assigned dosage for those patients receiving standard doses of insulin (26) and variable doses of insulin (49), as compared to only six modifications for those receiving tolbutamide.

3. There was an obvious greater tendency to drug-induced hypoglycemia in the tolbutamide group, as evidenced by the per cent change of fasting blood glucose concentrations from the base line. Owing to the spontaneous intensification of insulinogenesis and diabetogenic hyperinsulinism in many mild diabetics as the day advances, the tolbutamide effect undoubtedly was superimposed upon the individual's own increased elaboration of insulin during the late evening and early morning hours. Administration of the second dose before the evening meal also is pertinent in this context.

4. The basic design of these studies failed to elaborate upon evidences of reactive hypoglycemia either by symptoms, glucose tolerance testing for more than three hours, or concomitant insulin responses. One indirectly assumes that a sizable portion of this group did experience significant hypoglycemia, however, on the basis of the fact that an average of 20.4 per cent of all patients studied had a three-hour blood glucose value of less than 100 mg. per cent.

5. The tendency to drug-induced hypoglycemia—both with oral medication and insulin—is further indicated by the fact that from 37.4 to 49 per cent achieved "good" levels of control—i.e., "70 per cent or more of all the patients showed GTT fasting blood glucose values less than 110 mg. per cent." In a real sense, therefore, the two insulin-treated groups cannot be considered as proper controls in terms of evaluating vascular complications.

In essence, this study underscores the continuing crudeness of our ability to define "control of diabetes." I continually find myself reminding diabetologists that *diabetes mellitus is NOT a disease of the circulating blood glucose concentration.* Rather, it is a disorder of energy metabolism on the tissue level. Accordingly, until we have some practical method for determining the latter, the clinician is best advised to guide his therapy according to what I have referred to as "enlightened clinical control."... It is my belief, based upon several decades of observation, consultation, and research, that *some of the most serious diabetic complications—especially retinopathy and neuropathy—are in no small measure attributable to insistence upon "strict control" and the vigorous use of drugs to achieve this goal* at the cost of severe tissue glucopenia....

Perhaps the most significant aspect of the U.G.D.P. study is the attention it has focused upon the many deficiencies in our understanding of the pathogenesis and rational treatment of diabetes mellitus.

H. J. ROBERTS, M.D.
West Palm Beach, Fla.

'Dirty Wounds'

Editor, MEDICAL TRIBUNE:

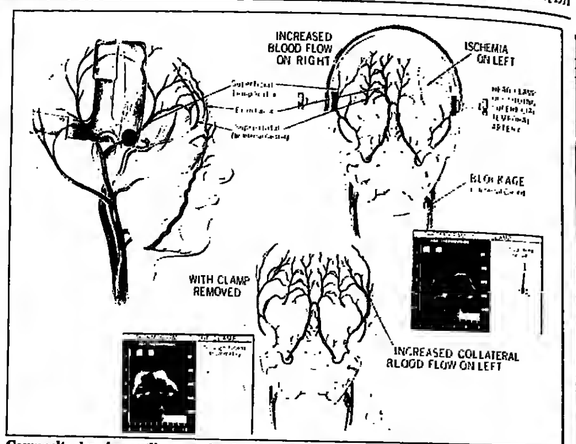
The action of the larvae of the common housefly (Musca domestica) in cleaning up dirty wounds was noted during the first World War.

It was investigated in Britain where the housefly was bred under sterile conditions and the larvae deliberately sown onto dirty wounds. The maggots performed a perfect débridement in that only necrotic and nonviable tissue was removed.

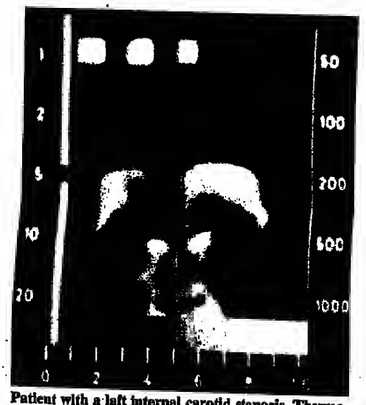
Further investigation showed that the maggots excrete large quantities of urea. Dressing moistened in a saturated aqueous solution of urea were substituted and similar results obtained without the esthetically unpleasant presence of the larvae.

DR. SHUTO, M.D., D.T.M.
Director, Southern Branch
Provincial Laboratory of Public Health
Calgary, Alta.

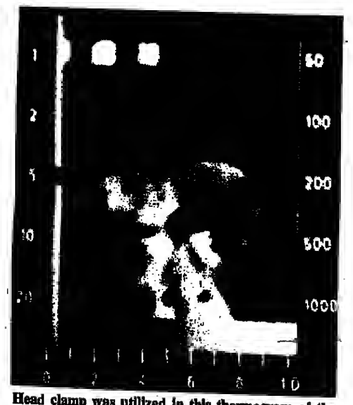
Prototype head clamp has adjustable rubber foot pads to promote bilateral occlusion of the superficial temporal arteries. Investigators took thermograms at least five minutes after application of this device.



Composite drawing outlines mechanism by which superficial temporary artery clamping reveals hidden abnormalities. In thermogram at right, researchers injected hot water into cadaver via catheter inserted into left internal carotid artery. Thermograms with forehead temperature asymmetries of 0.7° C. or more were considered abormal in this study.



Patient with a left internal carotid stenosis. Thermogram was taken with standard method and does not show significant forehead temperature asymmetry.



Head clamp was utilized in this thermogram of the same patient. Cool area over left eye indicates decreased blood flow in the left internal carotid artery.

Greater Thermogr Sensitivity Sought

Four Basic Fac atterns Discerned In Carotid Occ ve Disease Cases

BASIC PATTERNS of abnormal facial thermogr e studied by Dr. Terrance Capistrant, of St. Paul–Ramsey Hospital, St. Paul, to improve sensiti this method for predicting carotid occlusive disease. In the project were 315 patients and 200 controls. them had angiographically confirmed carotid disease. Of these 35, 31 were detected thermographically, one abnormal thermograms obtained from the latter subjects, by a combined ird head clamp technique, were examined for characteristic features.

DR. CAPISTRANT

Four basic facial exc ions were discerned: (1) medial forehead cooling, (2) a horizontal area o g of the supraorbital ridge that resembled an asymmetric thickening of the w, (3) cooling of one side of the forehead, and (4) asymmetric cooling in th gion supplied by the canthal and palpebral branches of the internal carotid a The latter showed up more often in combination with other findings than alon

Though some thermo contained combinations of these, they never comprised more than two of c types.

The most frequent a l pattern seen in the head clamp thermograms was category 3, followed by contrasts with previous findings with standard thermograms, where I appe st often and 2 was also very common.

Sex-specific differences are major determinants—perhaps greater than environmental factors—of monkey's play behavior, say Wisconsin RPRC investigators. Males, left, seem to prefer contact games; females play independently. Scientists, below, at New England RPRC, perform vectorcardiogram. They cooperate with Boston U. Medical School and Maine Medical Center researchers to study problems of human cardiac disease.

Primate Research Applied as a Key To Human Health

OVER 100 SCIENTISTS at the seven labs of NIH's Primate Research Centers Program collaborate with visiting investigators in finding solutions for human health problems. Under the institute's Division of Research Resources, these units are situated throughout the U.S. Their locations and school affiliations are Oregon Regional Primate Research Center, Beaverton, University of Oregon; Washington RPRC, Seattle, University of Washington; New England RPRC, Southborough, Mass., Harvard University; Yerkes RPRC, Atlanta, Ga., Emory University; Delta RPRC, Covington, La., Tulane University; National Center for Primate Biology, Davis, University of California; and Wisconsin RPRC, Madison, University of Wisconsin.

Central nervous system, cardiovascular, and neonatal diseases, mental retardation, and reproductive biology are under study.

Proportional body measurements of 16-year-old with stunted growth are taken by Dr. Solish at the outpatient clinic. In addition, he drew blood samples, took x-rays, and scraped tissue cells from patient's mouth for the purpose of cytogenetic studies.

Genetics Counseling Seen as Part Of Trend to Preventive Medicine

GENETICS COUNSELING fits into the present trend towards preventive medicine, stresses Dr. George Solish, Associate Professor of Obstetrics and Gynecology and director of the newly established genetics counseling clinic at Downstate Medical Center, Brooklyn.

A feature of this clinic is close cooperation with other Downstate specialists — such as hematologists and surgeons — made necessary by the great variety of defects (some 1,400 of which are presently known, according to the director) found to have a genetic basis. The unit also serves to monitor congenital malformations due to pollution or drugs taken during pregnancy, says Dr. Solish.

Research and teaching are other functions of the clinic.

It is supported by a grant from the Birth Defects Institute of the New York State Department of Health.

Dr. S clinic effort to dermatoglyphic print from mother of 16-year-old boy. The with counseling facilities in a number of other states in an tests on patient's relatives who may be living in vicinity.

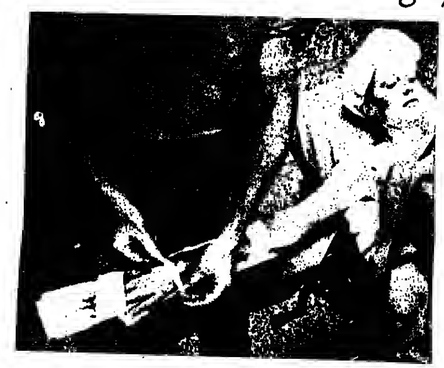
Union-made: Twice daily, physicians at the University-McCook Hospital in Hartford and the U.S. Veterans Administration Hospital in Newington gather for joint conferences on patients by way of a newly implemented two-way closed-circuit TV system, the first in Connecticut. They exchange questions and comments; charts and graphs can also be transmitted. This hook-up anticipates a network that will ultimately, it is hoped, link all of the state's hospitals with the University of Connecticut medical and dental schools and the Yale University School of Medicine.



One to two hours before surgery, 10 mg Injectable Valium (diazepam) I.M.



can promptly calm, lessening anxiety and tension associated with strange




surroundings and disturbing procedures. Perhaps best of all, Injectable


Valium (diazepam) markedly diminishes recall of the preoperative procedure.

Premedication for surgery

Injectable Valium (diazepam) is a useful premedicant for reducing undue anxiety. Recall of preoperative procedures is markedly diminished. When given in conjunction with narcotics, a reduction of narcotic dosage should be considered. (See summary of prescribing information.) Injectable Valium should not be mixed with other drugs, solutions, or fluids. The new 10-mg disposable syringe can help you observe this precaution at the same time it helps assure aseptic handling. Injectable Valium seldom significantly alters vital signs. Nevertheless, there have been infrequent reports of hypotension and rare reports of apnea and cardiac arrest, usually following I. V. administration. Resuscitative facilities should be available.

To relieve excessive preoperative anxiety, remember Injectable Valium (5 mg/ml) 2-ml ampul, 10-ml vial, 2-ml disposable syringe.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: relief of skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome; tetanus; status epilepticus and severe recurrent seizures; anxiety prior to gastroscopy, esophagoscopy, and surgical procedures; cardioversion (I.V.).

Contraindicated: In infants; in patients with known hypersensitivity to the drug; in acute narrow angle glaucoma; may be used in patients with open angle glaucoma receiving appropriate therapy.

Warnings: *Inject I.V. slowly, directly into vein; take at least one minute for each 5 mg (1 ml) given. Do not mix or dilute with other solutions or drugs. Do not add to I.V. fluids.* Rare reports of apnea or cardiac arrest noted, usually following I.V. administration, especially in elderly or very ill and those with limited pulmonary reserve; duration is brief; resuscitative facilities should be available. Not recommended as sole treatment for psychotic or severely depressed patients. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs. Caution against hazardous occupations requiring complete mental alertness. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard to mother and child.

Precautions: If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of Valium, such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Not recommended for bronchoscopy, laryngoscopy, obstetrical use, or in diagnostic procedures other than gastroscopy and esophagoscopy. Laryngospasm and increased cough reflex are possible during gastroscopy; necessary countermeasures should be available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Since effect with narcotics may be additive, appropriate reduction in narcotic dosage is possible. Use lower doses (2 to 5 mg) for elderly and debilitated. Safety and efficacy in children under 12 not established.

Side Effects: Drowsiness, fatigue, ataxia, confusion, depression, constipation, dysarthria, diplopia, headache, hypoactivity, hiccups, hypotension, incontinence, jaundice, nausea, changes in libido, changes in salivation, phlebitis at injection site, urinary retention, skin rash, syncope, slurred speech, urticaria, tremor, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, use of the drug should be discontinued. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy. Minor EEG changes, usually low-voltage fast activity, of no known significance.

Injectable Valium® (diazepam)

benefits every step of the way.

Small Outbreaks Of Salmonellosis Reported in U.S.

Medical Tribune Report

ATLANTA, GA.—Two outbreaks of salmonellosis—one in Maine and the other in California—were reported here by the Center for Disease Control.

Thirty-three persons attending a christening in Kittery Point, Me., were served lunch on August 7, and within two days 17 of those who ate the meal became ill with gastroenteritis. Cultures of stool specimens from 14 were positive for Salmonella thompson.

Sixteen persons who ate chicken salad became ill, while only one of 12 who did not eat this food was similarly affected.

Ingredients of the chicken salad included home-grown lettuce and celery, mayonnaise, and three chickens, all purchased at a local supermarket. There were no ingredients or food samples left for laboratory analysis. Environmental cultures were all negative. There was no evident error in food handling or medical history to suggest recent salmonellosis in the food handler.

Fifty per cent of all nonhuman isolates of Salmonella thompson reported to the CDC in 1970 were obtained from chickens, it was noted. Boiling chicken for one hour should be sufficient to kill salmonellae. In this case, recontamination presumably occurred after it was boiled, though no specific handling error was documented.

The other outbreak was due to Salmonella berta and occurred in June in Red Bluff, Calif. Approximately 200 ill persons were identified. Fifteen were hospitalized, and two elderly persons died.

Epidemiologic investigation revealed the vehicle of infection to be custard-filled pastries, particularly maple bars, processed and sold at a single bakery. The contaminated ingredient was unpasteurized, frozen turkey eggs supplied only to that bakery. Three bakery employees and the owner of the turkey-breeding farm supplying the eggs were among those persons with stools positive for Salmonella berta.

Asthmatic's Breath Measured

At University Hospitals of Cleveland, Dr. Howard Schwartz, allergist-immunologist, demonstrates breathing measurement device to asthmatic patient. He is investigating effector mechanisms in immune responses.

Lipoprotein Study Funded

HOUSTON, TEX.—The John A. Hartford Foundation, Inc., has awarded Baylor College of Medicine and the Methodist Hospital a two-year $289,572 research grant for studies of plasma lipoprotein and lipid transport, the arterial wall, and patterns of atherosclerosis. Dr. Antonio Gotto, Professor of Medicine at Baylor, will be the principal investigator. He will be assisted by Drs. Richard Jackson and Sumana K. Devi, of NIH, and Dr. Joel Morrisett, of Stanford University.

Exercise to Bar Coronary Ills Held to Need Stress Testing

Continued from page 1

changes his life style, takes reasonable time for rest and relaxation away from his main occupations, finds other outlets that are enjoyable, makes whatever adjustments are necessary and possible in his home situation, one may hope to effect some improvement."

The very least that should be required in the way of stress examination is a Master two-step exercise test and preferably a double Master, Dr. Phibbs said. A monitored multistage exercise study is preferable, he added, and where facilities are available this should always be carried out as a prerequisite for participation in an exercise program, he added.

Evidence of myocardial ischemia often appears on the S-T segment of the stress electrocardiogram in patients who are completely asymptomatic and have normal resting electrocardiograms, he said.

"In my own experience with this particular finding," he said, "I would insist on a complete investigation, including coronary angiograms, before recommending any program of even moderate strenuous exertion."

The physician remarked that discussions of exercise in prevention of heart disease nearly always concern themselves with coronary heart disease. Exercise may also be of benefit in patients with chronic cor pulmonale, however, although it is almost never prescribed for this disorder, he maintained.

"It is time and past time," he stressed, "for the medical profession to investigate the early symptoms and signs of obstructive lung disease as carefully and with as much concern as it investigates the symptoms of coronary artery insufficiency. Here again, an exercise program may be of great benefit and probably carries a much lower risk than in the patient with early coronary artery disease.

"Exercise in this group of patients improves functional capability in a very clear-cut and striking manner."

In patients with occupational exposure to organophosphates who present with signs of parasympathetic overstimulation, a history of overexposure should be obtained but, if necessary, treatment of a supportive nature should begin before the history is obtained, Dr. Quinby recommended. Treatment should never be delayed until laboratory confirmation is obtained, he warned.

Respiratory maintenance is the most important part of therapy, he said. Artificial respiration should be given when required, including tracheostomy and positive-pressure ventilation if respiratory failure is not later relieved by antidotes.

Atropine sulfate should be given intravenously as soon as cyanosis is overcome, but not until then. Intravenous pralidoxime chloride is a specific antidote and sometimes gives dramatic results. Finally, other symptomatic treatment can be given and skin, hair, and clothes decontaminated, the toxicologist said.

Organophosphorus Poisoning May Be on the Increase

From Wenatchee, Wash.

► The medical profession should be prepared to diagnose and treat increased poisoning from organophosphorus pesticides, according to Dr. Griffith E. Quinby, a toxicologist from Wenatchee, Wash.

The restriction of chlorinated hydrocarbon pesticides is leading to greater reliance upon the much more toxic organophosphorus compounds, and this will probably lead to an increase in death and morbidity from these chemicals, he explained.

Respiratory Snags Seldom Tied To Major Black Lung Signs

From W. Va. University

► Coal workers' pneumoconiosis is associated with minor impairments in respiratory function, but by themselves these respiratory deficits are seldom associated with significant symptoms or respiratory disability, the meeting was told by Drs. W. Keith, C. Morgan, N. LeRoy Lapp, and Anthony Seaton, of the West Virginia University School of Medicine.

However, the addition of those abnormalities to those caused by another mild unrelated pulmonary disease, such as chronic bronchitis, may result in the patient's developing symptoms that he would not have were only one disease present, they said.

Studies of several groups of coal miners with simple coal workers' pneumoconiosis found that their residual volume is often larger than predicted, that minor abnormalities of gas exchange are often present, that the mechanical properties of the lung are occasionally altered, and that in about 50 per cent of subjects lung compliance decreases with increased frequency of respiration, the investigators reported.

Bubonic Plague Case Reported in Oregon

Continued from page 1

his antibiotic was changed to streptomycin, 1.5 Gm. daily in three doses.

The organism was sent to the Oregon State Board of Health Laboratories and on August 10 was reported as presumptively positive for Yersinia pestis by the fluorescent antibody technique. This identification was subsequently confirmed by the Zoonoses Section, Ecological Investigations Program, Fort Collins, Colo.

From July 27 to August 4, the boy had resided at a cabin near a small private lake in a remote part of northeast Oregon, approximately 100 miles from the area of the last reported plague case in 1970.

The patient denied any known contact with rodents, although chipmunks, tree squirrels, and wood rats are abundant around the cabin area. No die-off of any of these animals was apparent to either the boy or any of his family members. He was unaware of any flea bites and was not certain of the cause of the toe lesion.

The other 10 children and two adults who were living at the cabin have remained well.

Toxicity of Methotrexate To Liver Is Held Doubtful

Continued from page 1

however, did not differ significantly from untreated psoriatics.

"Results of the study do not suggest abandoning methotrexate as a treatment of severe psoriasis," Dr. Zachariae emphasized, "but may stimulate a wider use of liver biopsy in the control."

Multifocal necrosis of the liver has previously been reported in psoriatics on methotrexate, he said, but until now it has not been investigated in a prospective study. "Among our patients," he said, "focal necrosis was found with equal frequencies in psoriatics on and without methotrexate."

Dr. Zachariae remarked that there is no doubt that intermittent treatment with methotrexate is far less toxic to the liver than continuous treatment in low dosages. His doses were 25 to 50 mg. once weekly, administered intramuscularly.

All of Dr. Zachariae's patients receiving methotrexate displayed an increase in serum glutamic pyruvic transaminase, demonstrating, he commented, that this rise is an almost normal finding during methotrexate treatment.

Chess Solution

White wins by: 1 K-N7!, P-QR4; 2 K-R6, P-QR5; 3 K-R5, P-QR6; 4 K-R4, P-QR7; 5 K-N3, threatening 6 N-K6 mate. So Black must play 5 . . . K-Q5; 6 KxP, KxP; and eventually all his other pawns will also be captured.

The ultimate test:

the recovery room

Confirms the value of Talwin in the hospital and in private practice

analgesic efficacy comparable to meperidine and morphine with a minimum of significant adverse effects

In postoperative patients: less circulatory depression with Talwin

In a double-blind study of 342 postop patients, circulatory depression occurred in 13.2% *of* 174 patients receiving morphine, as *compared* with 5.4% of 168 patients receiving Talwin.[1]

...and in other patients: less respiratory and circulatory depression with Talwin

In a double-blind study of 3 narcotic analgesics and Talwin in 118* patients with suspected acute myocardial infarction, Talwin caused a significantly lower incidence in the fall of systolic blood pressure than the 3 narcotics when the initial pressure was 120 mm. Hg or higher. Unlike the narcotics, Talwin caused a statistically significant *rise* in the systolic blood pressure of patients with initial pressures of less than 120.[2]

In a study of a series of patients given Talwin or meperidine while anesthetized for surgery, the investigators concluded: "It would therefore appear that pentazocine is a much safer drug in respect of respiratory depression than pathidine [meperidine], particularly when repeated injections are to be given, e.g. postoperatively or in obstetric practice."[3]

...and less of the other adverse effects associated with narcotic analgesics

Compared to morphine, Talwin is relatively free from urinary retention and constipation.

Is less likely to cause nausea, vomiting and diaphoresis than meperidine.

Available in 3 dosage strengths—all within the range of recommended dosage. Talwin is available in 30 mg., 45 mg., and 60 mg. strengths to provide analgesia specific to patients' needs throughout the course of therapy. Most studies indicate that the higher dosage strengths produce little, if any, increase in the incidence of adverse reactions.

References: 1. Wallace, George: *Int. Surg.* 53:185, Feb. 1970.
2. Scott, M. E. and Orr, Rosemary: *Lancet* 1:1055, May 31, 1969.
3. Davie, I., *et al.*: *Brit. J. Anaesth.* 42:113, Feb. 1970.
*Other drugs studied: diamorphine and methadone.

Injectable
Talwin®
brand of
pentazocine
(as lactate)

bulwark against moderate to severe pain

Injectable Talwin® brand of pentazocine (as lactate)
Analgesic for parenteral use

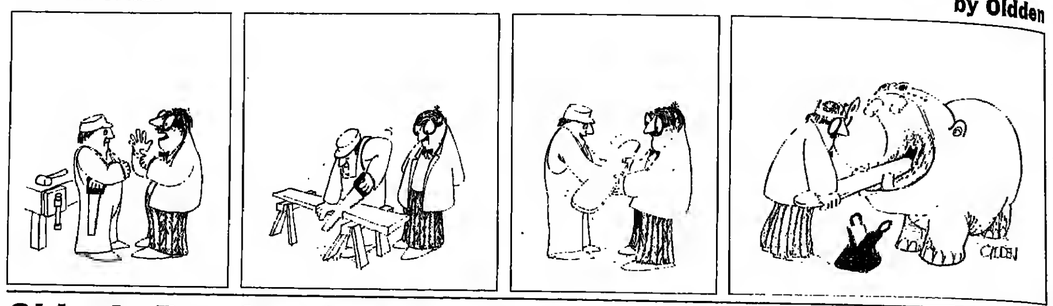
- **tolerance to analgesic efficacy has not been observed**
- **not subject to narcotic controls**

Contraindications: Talwin should not be administered to patients who are hypersensitive to it.

Warnings: *Head Injury and Increased Intracranial Pressure.* The respiratory depressant effects of Talwin and its potential for elevating cerebrospinal fluid pressure may be markedly exaggerated in the presence of head injury, other intracranial lesions, or a preexisting increase in intracranial pressure. Furthermore, Talwin can produce effects which may obscure the clinical course of patients with head injuries. In such patients, Talwin must be used with extreme caution and only if its use is deemed essential.
Usage in Pregnancy. Safe use of Talwin during pregnancy (other than labor) has not been established. Animal reproduction studies have not demonstrated teratogenic or embryotoxic effects. However, Talwin should be administered to pregnant patients (other than labor) only when, in the judgment of the physician, the potential benefits outweigh the possible hazards. Patients receiving Talwin during labor have experienced no adverse effects other than those that occur with commonly used analgesics. Talwin should be used with caution in women delivering premature infants.
Drug Dependence. Special care should be exercised in prescribing pentazocine for emotionally unstable patients and for those with a history of drug misuse. Such patients should be closely supervised when long-term therapy is contemplated. There have been instances of psychological and physical dependence on Talwin in patients with such a history and, rarely, in patients without such a history. Abrupt discontinuance following the extended use of parenteral Talwin has resulted in symptoms *such* as abdominal cramps, elevated temperature, rhinorrhea, restlessness, anxiety, and lacrimation. Even when these occurred, discontinuance has been accomplished with minimal difficulty. In the rare patient in whom more than minor difficulty has been encountered, reinstitution of parenteral Talwin with gradual withdrawal has ameliorated the patient's symptoms. Substituting methadone or other narcotics for Talwin in the treatment of the Talwin abstinence syndrome should be avoided.
In prescribing parenteral Talwin for chronic use, particularly if the drug is to be self-administered, the physician should take precautions to avoid increases in dose and frequency of injection by the patient and to prevent the use of the drug in anticipation of pain rather than for the relief of pain.
Just as with all medication, the oral form of Talwin is preferable for chronic administration.
Acute CNS Manifestations. Patients receiving therapeutic doses of Talwin have experienced, in rare instances, hallucinations (usually visual), disorientation, and confusion which have cleared spontaneously within a period of hours. The mechanism of this reaction is not known. Such patients should be very closely observed and vital signs checked. If the drug is reinstituted it should be done with caution since the acute CNS manifestations may recur.
Usage in Children. Because clinical experience in children under twelve years of age is limited, the use of Talwin in this age group is not recommended.
Ambulatory Patients. Since sedation, dizziness, and occasional euphoria have been noted, ambulatory patients should be warned not to operate machinery, drive cars, or unnecessarily expose themselves to hazards.
Precautions: *Certain Respiratory Conditions.* The possibility that Talwin may cause respiratory depression should be considered in treatment of patients with bronchial asthma. Talwin should be administered only with caution and in low dosage to patients with respiratory depression (e.g., from other medication, uremia, or severe infection), obstructive respiratory conditions, or cyanosis.
Impaired Renal or Hepatic Function. Although laboratory tests have not indicated that Talwin causes or increases renal or hepatic impairment, the drug should be administered with caution to patients with such impairment. Extensive liver disease appears to predispose to greater side effects (e.g., marked apprehension, anxiety, dizziness, sleepiness) from the usual clinical dose, and may be the result of decreased metabolism of the drug by the liver.
Myocardial Infarction. As with all drugs, Talwin should be used with caution in patients with myocardial infarction who have nausea or vomiting.
Biliary Surgery. Until further experience is gained with the effects of Talwin on the sphincter of Oddi, the drug should be used with caution in patients about to undergo surgery of the biliary tract.
Patients Receiving Narcotics. Talwin is a mild narcotic antagonist. Some patients previously receiving narcotics have experienced mild withdrawal symptoms after receiving Talwin.
CNS Effect. Caution should be used when Talwin is administered to patients prone to seizures; seizures have occurred in a few such patients in association with the use of Talwin although no cause and effect relationship has been established.
Adverse Reactions: The most commonly occurring reactions are: nausea, dizziness or lightheadedness, vomiting, euphoria.
Infrequently occurring reactions are—*respiratory:* respiratory depression, dyspnea, transient apnea in a small number of newborn infants whose mothers received Talwin during labor; *cardiovascular:* circulatory depression, shock, hypertension; *CNS effects:* sedation, alteration of mood (nervousness, apprehension, depression, floating feeling), dreams; *gastrointestinal:* constipation, dry mouth; *dermatologic including local:* diaphoresis, sting on injection, flushed skin including plethora, *dermatitis* including pruritus; *other:* urinary retention, headache, paresthesia, alterations in rate or strength of uterine contractions during labor.
Rarely reported reactions include—*neuromuscular and psychiatric:* muscle tremor, insomnia, disorientation, hallucinations; *gastrointestinal:* taste alteration, diarrhea and cramps; *ophthalmic:* blurred vision, nystagmus, diplopia, miosis; *other:* tachycardia, nodules and ulceration at injection site, weakness or tiredness, chills, moderate transient eosinophilia, allergic reactions including edema of the face.
See Acute *CNS Manifestations* and Drug Dependence under *WARNINGS.*
Dosage and Administration: *Adults, Excluding Patients in Labor.* The recommended single parenteral dose is 30 mg. by intramuscular, subcutaneous, or intravenous route. This may be repeated every 3 to 4 hours. Doses in excess of 30 mg. intravenously or 60 mg. intramuscularly or subcutaneously are not recommended. Total daily dosage should not exceed 360 mg. As with most parenteral drugs, when frequent daily injections are needed over a prolonged period, intramuscular administration is preferable to subcutaneous. In addition, constant rotation of injection sites (e.g., the upper outer quadrant of the buttocks, mid-lateral aspects of the thighs, and the deltoid areas) is recommended.
Patients in Labor. A single, intramuscular 30 mg. dose has been most commonly administered. An intravenous 20 mg. dose has given adequate pain relief to some patients in labor when contractions become regular, and this dose may be given two or three times at two- to three-hour intervals, as needed.
Children Under 12 Years of Age. Since clinical experience in children under twelve years of age is limited, the use of Talwin in this age group is not recommended.
CAUTION, Talwin should not be mixed in the same syringe with soluble barbiturates because precipitation will occur.
Overdosage: Manifestations. Clinical experience with Talwin overdosage has been insufficient to define the signs of this condition.
Treatment. Oxygen, intravenous fluids, vasopressors, and other supportive measures should be employed as indicated. Assisted or controlled ventilation should also be considered. Although nalorphine and levallorphan are *not* effective antidotes for respiratory depression due to overdosage or unusual sensitivity to Talwin, parenteral naloxone (Narcan®, available through Endo Laboratories) is a specific and effective antagonist. If naloxone is not available, parenteral administration of the analeptic, methylphenidate (Ritalin®), may be of value if respiratory depression occurs.
Talwin is not subject to narcotic controls.
How Supplied: *Ampuls of 1 ml. (30 mg.), 1½ ml. (45 mg.), and 2 ml. (60 mg.),* each 1 ml. containing Talwin (brand of pentazocine) as lactate equivalent to 30 mg. base and 2.8 mg. sodium chloride, in water for injection. Boxes of 10, 25, and 100.
Multiple dose vials of 10 ml., each 1 ml. containing Talwin (brand of pentazocine) as lactate equivalent to 30 mg. base, 2 mg. acetone sodium bisulfite, 1.8 mg. sodium chloride, and 1 mg. methylparaben as preservative, in water for injection. Boxes of 1.
The pH of Talwin solutions is adjusted between 4 and 5 with lactic acid and sodium hydroxide. The air in the ampuls and vials has been displaced with nitrogen gas.

Winthrop Winthrop Laboratories, New York, N.Y. 10016

by Oldden



China's Barefoot Doctors Take Care to Labor

Continued from page 1

mentary training in medicine and health protection, they frequently add age-old Chinese medical techniques.

By thus combining modern medicine with such treatments as acupuncture, massage, and herbal prescriptions, they are often able to handle difficult as well as routine cases.

Probably the main service they provide is the development of better social and personal hygiene. Following Mao Tse-tung's instructions to put prevention first, they lead the fight against flies, cockroaches, bugs, fleas, and the snails that have devasted whole areas of the rice-growing areas of south China.

Tung Tai-ho, a barefoot doctor from Shunyi county, is often cited by officials as an example of outstanding zeal in this respect. He organizes regular checks on water supplies and visits the homes of all commune members regularly to spray insecticides. He also teaches fellow members of the commune how to prepare herbal medicines.

With a population exceeding 700,000,000 people, China is desperately short of medicine and medical equipment. Yet officials report that more than 1,000 small pharmacies have been set up around Peking, using almost exclusively the medicinal herbs and acupuncture techniques that the barefoot doctors are substituting for the more sophisticated medical practices of the West.

In the Chiang Tai people's commune, on the western outskirts of Peking, 19-year-old Wang Lee-hun typifies the barefoot doctor. Born and raised in the area, she now works as an assistant to Dr. Chou Hua-chin, the commune's woman doctor, and her aim is to become a fully trained physician. Working with Dr. Chou and getting practical training with the peasants in the fields will, she told a recent visitor, eventually equip her for her desired career and perhaps give her better training than if she had spent six years in medical school.

Sixteen barefoot doctors work in the Chiang Tai commune, but only four are assigned to Dr. Chou's clinic. This is the standard ratio for barefoot to regular doctors. Dr. Chou, a plump middle-aged woman from Peking, volunteered to work in the countryside a year ago.

The commune itself is divided into "production brigades," the basic unit for work in the fields. Dr. Chou treats patients from 681 households in the production brigade served by the clinic. Apart from a small token payment, treatment is given free.

The clinic itself is housed in a small one-room cottage with an earthen floor. The walls are whitewashed and the equipment limited to a few bare wooden chairs, a threadbare couch, and one small, roughly made medicine cabinet. The cabinet contains a bare minimum of drugs, and there is no sign of records or other equipment.

The clinic practices mainly Western medicine, with some acupuncture for such ailments as headaches or stomach upsets. When operations need to be performed, patients are sent to the eight-bed commune hospital, which has a staff of doctors and nurses. More difficult cases are sent to the bigger hospitals in Peking.

Work Half Day in Fields

The barefoot doctors work half a day with the production brigade in the fields and half a day at the clinic. While working in the fields they check on the health of their fellow workers, to whom they teach hygiene as well as methods of curing simple illnesses.

Although clinics such as the one operated by Dr. Chou are rudimentary by Western standards, they offer a viable alternative to the total lack of facilities available before. Previously the sick could spend days waiting for treatment at the commune hospital. Now, minor ailments, which formerly would have meant loss of work, are dealt with promptly, and a valuable amount of work time for the "brigade" is saved.

Although relatively primitive at the lower levels and forced on China by necessity, the barefoot doctor program has brought a modicum of medical service to millions for the first time in their lives, creating the framework for a nationwide health scheme.

UPI Photo

Herbal remedies and massage are employed by many barefoot doctors in bringing medical aid to workers and peasants. Above, a production brigade examines medicinal plants.

Therapy Possible In Infants at Risk Of Brain Bleeding

Medical Tribune Report

Los Angeles—The possibility of therapeutic measures may exist for newborn infants at high risk of intracranial hemorrhage, a group of Vanderbilt University School of Medicine investigators reported here at the 18th annual meeting of the Society of Nuclear Medicine.

The group was headed by Dr. A. Bertrand Brill, head of the medical school's Division of Nuclear Medicine and Biophysics.

Because of the potential usefulness of therapy in infants considered at high risk of intracranial bleeding, they said they investigated the time of bleeding to see if it occurred in utero or too early post partum for therapy to be initiated.

They found that most of the infants' intracranial bleeding occurred "after birth and after their disease process was clearly established." Therefore, they said, "the possibilities for therapeutic measures may exist. . . ."

Time of Blooding Investigated

The time of intracranial bleeding for the newborns was investigated in relation to the time they were infused with red cells tagged with the stable tracer Cr^{50}, usually prior to 12 hours of age, they said. If the infant died and an intracranial hemorrhage was found at autopsy, samples of the clot were obtained.

The amounts of Cr^{50} and natural iron in the infant's blood and clot samples were quantitated in vitro by neutron activation analysis, they noted. Since Cr^{50} was used as the red blood cell tag, there was no hazard to the infant from ionizing radiation.

The group reported that it had tagged 132 high-risk newborns. Forty-three of these infants died, and autopsies were performed on 36. Twenty-eight were found to have intracranial hemorrhages.

For these 28 infants, 16 were diagnosed as hyaline membrane disease, seven were extremely immature, and the rest died of other disorders. The median age at death was 33.2 hours, the median age at tagging 6.3 hours.

22 Hemorrhaged After Tag

Twenty-two hemorrhaged after tagging. In four infants, part of the hemorrhage occurred before tagging and part afterwards. In two infants, the hemorrhage occurred before tagging.

If the minimum fraction of the clot showing the tagged red blood cells was 70 per cent or greater, it was concluded that the hemorrhage occurred after tagging, the investigators explained. If the minimum fraction was less than 70 per cent but more than 30 per cent, then bleeding might have occurred both before and after tagging. If the minimum fraction was less than 30 per cent, the hemorrhage occurred prior to tagging.

Coauthors were Dr. Mildred Stahlman, Stac Swanstrom, G. Faxellus, Norman C. Dyer, R. Gutberlet, and J. Raye.

Computer Checks Camptothecin Drugs For Their Activity Against Cancer

Continued from page 1

ing group of chemists at Wayne State University led by A. I. Meyers, Ph.D.

Coauthor was J. C. Howland, Ph.D., of the L.S.U. Department of Pharmacology.

Free Radicals May Be Active In Generation of Cancer

From Johns Hopkins

► Free radicals appear to be active in the generation of cancer by potent chemical agents, said Bertram I. Cohen, Ph.D., of the Johns Hopkins University.

Such agents as benz[a]pyrene appear to form free radicals to a much greater extent than other compounds do under mild conditions, like those that exist in the body, he said. This formation of free radicals, which act directly on DNA, may explain the specific activity of these compounds in cancer formation.

The radicals were detected by electron spin resonance.

Evidence that benz[a]pyrene is converted inside the cell to an active substance that readily combines with DNA was presented in an earlier report by Ronald Lorentzen, Ph.D., also of Johns Hopkins.

Bacterial DNA, which reacted with these active species, had a lowered survival rate and a higher number of mutations than the original DNA. A bacterial 2,4,5-T, the investigators stated, repair system for the modified DNA was detected, suggesting that one also exists in animals.

Dioxin Fed to Pregnant Rats Said to Kill Their Fetuses

From Ottawa

► Unborn rats were reported to have been killed by feeding pregnant females extremely small amounts of a chemical of the dioxin class. Dioxins have been found as contaminants in a widely used herbicide and even in certain foods, the report noted.

Four micrograms of 2,3,7,8-tetrachlorodibenzo-p-dioxin per kilogram of body weight fed to gestating rats for six to 15 days killed the fetuses, said K. S. Khera, Ph.D., of the Food and Drug Directorate Research Laboratories, Department of Health and Welfare, Ottawa, and J. A. Ruddick, Ph.D.

A daily dietary level as low as 0.5 microgram per kg. of body weight reduced the life expectancy of the newborn rats, and toxic effects were measurable at a dietary level of a 0.25 microgram.

Dioxins have been identified in margarin, food emulsifiers, glyceryl monooleate, oleic acid, chick livers, animal food stocks, animal tallow, and the herbicide 2,4,5-T, the investigators stated.

The Mall

● "Heart Watch Urged in Viral Hepatitis," says a cover of *Internist Observer,* sent to us by Dr. Edgar M. Allen of Warden, Wash., who wants to know if that's the nonfatal kind.

● The high moral standards of precision machinery were the subject of a story in the *Los Angeles Times* that was forwarded to us by Dr. Albert Fields of that city.

"Dial Manufacturing Co., a precision machine shop, does not have dealings in pornography," it began, and ended by explaining that the company had leased the premises to another company, which had sublet part of it "to others who apparently engaged in activities not compatible with a precision machine shop."

● Child (1). An old friend has turned up in two more places. Dr. Nellie D. Wright of Bristol, Va., found it in *J.A.M.A.:*

"All states, starting with the early 1800's passed laws against abortion except when necessary to save the life of the mother, (or in some few cases to protect her health or to save the life of the child)."

Dr. Howard R. Grove of Bakersfield, Calif., found it in *American Medical News:*

"In Washington, abortion is permitted only to preserve the life of the mother or that of the child."

● Child (2). Dr. Sam A. Nixon of Floresville, Tex., on the other hand, found an odd type of neonate in an instructional ad on VD in *Family Health:*

"In one small city with a population of less than 30,000 one case alone, when traced out, led to the identification and cure of over one hundred and forty-six people including one congenital newborn."

● Readers old enough to remember the era of double-talk should be given a touch of nostalgia by a lucky find in *American Medical News* that was made by Dr. Alan B. Van Sciver of Larchmont, N.Y.

"William W. Travis of Alabaster, Ala., presumes 'renders' included hospital pharmacists...."

They're the ones who dispense pharmmises, obviously.

● Drs. Charles E. Jaeckle of Defiance, Ohio, and T. Stacy Lloyd, Jr., of Fredericksburg, Va., were not overimpressed with a MEDICAL TRIBUNE headline that said: "Psychiatric Ills Common in Young Adults Who Tried Suicide."

("Profound observation!" wrote Dr. Jaeckle; "So what else is new?" asked Dr. Lloyd; "Well, that's what the silly story said," said tha chap responsible for the headline.)

● "Doo Rickles' wife gave birth to a Cedars of Lebanon Hospital. He is the couple's second child," says the item in the Santa Barbara, Calif., *News-Press* that J. F. Smithcors, D.V.M., sent in.

Now there's a cause for sibling rivalry for the firstborn!

● Breakthrough! Dr. Mark J. Popp of Brookfield, Wis., contributed the following prize award announcement from the minutes of the annual business meeting of the American College of Obstetricians and Gynecologists. The prize went to an exhibit entitled: "The Use of Anti-RH Antibiotics for the Prevention of RH Immunization."

● Dr. Herbert Notkin of Philadelphia writes us:

"There is a Public Health Service department with the following name:

"Institutional Assurance on Investigations Involving Human Subjects, Including Clinical Research and Investigations in Behavioral and Social Sciences."

It's probably known as Freddy to the ingroup.

Readers are invited to contribute items of 100 words or less to this column. Contributions should be invited to MEDICAL TRIBUNE, *110 East 59th St., New York, N. Y., 10022.*

Knee Injury Rate Much Higher In Footballers Harmed Before

Medical Tribune Report

NEW YORK—A four-year study of more than 61,000 varsity high school football players shows that those with previous serious knee injury are more apt to be seriously reinjured, at a rate 15 to 17 times greater, than players with sound knees, it was reported here at a meeting of the Medical Society of the State of New York Committee on the Medical Aspects of Sports.

DR. CALLAHAN

The study clearly implicates the use of long cleats on the sole of the shoe and finds that elimination of such cleats may reduce the number of knee injuries by half, according to William T. Callahan, Ph.D., director of the study, which was initiated by the New York State Public High School Athletic Association.

"With regard to reducing the seriousness of injuries to the lower extremities, particularly the knee," he said, "the data indicated clearly that two equipment combinations—low shoe, disk heel, ankle wrap and low shoe, short cleats, and no ankle support—produced a statistically significant lower rate of serious injuries. Conversely, a combination of low shoes, conventional cleats, and ankle tape produced a greater number of serious knee injuries than expected.

"It is recommended, therefore, that varsity high school football players be outfitted with low shoes and some form of disk, or flat heels, or short cleats. It is further recommended that a similar modification—shortening—of the sole cleats on football shoes be made as soon as possible."

The study, conducted by Dr. Callahan in association with Francis Crowley, Ph.D., Fordham University, and J. Kenneth Hafner, of the New York State Public High School Athletic League, also proposed that players who suffer a serious knee injury be required to take part in a planned program of rehabilitation under the direction of a physician as a precondition to further varsity football competition. Furthermore, such players should be rigorously examined by a physician at the start of each season to determine the degree of rehabilitation of the injured knee and ultimate fitness of the player to participate in competition.

An Evolutionary Process

Discussing the study's findings, Dr. Callahan said that the reduction of serious injuries to the lower extremities is, and will be, an evolutionary rather than a revolutionary process.

"For example," he continued, "if all players were immediately equipped with low shoes and drastically shortened cleats (heel and sole), the total number of serious knee injuries (328) would be reduced by only some 10-20 cases. Furthermore, if all players with a history of previous serious knee injuries were completely rehabilitated and returned to play, the total of serious knee injuries would only be reduced, state-wide, by another 40-50 cases.

"By means of simple arithmetic, it can be seen that some 258 serious knee injuries could still be expected during the course of a varsity high school football season. Elimination of long cleats on the sole of the shoe [and of cleats on the heel] will probably cut that total in half—perhaps to some 130 serious injuries."

Other recommendations:

● That more attention be given to the relative levels of physical maturity of the youngest and oldest boys eligible to compete in varsity play.

● That year-round programs of general physical fitness for all high school students, athletes and noncompetitors, be conducted.

● That year-round conditioning programs be directed to the areas of highest vulnerability, such as the knee.

● That extended spring or summer preseason conditioning programs be instituted for football players.

Dr. Callahan stressed that the results of the study indicate there is a great need for changing the rules of high school football to modify or eliminate potentially dangerous situations and also a need for upgrading the understanding and skills of game officials.

"Certain techniques, such as 'crack back' blocking, piling on, clipping, spearing, 'blind side' blocking, and the like, must be discouraged by coaches and officials," he said. "Field zones in which clipping is legal must be restricted and innovations designed to improve safety—restriction of blocking to above the waist, for example—must be tried and evaluated regardless of whether [or not] they change the 'traditional' nature of the game."

Appointed at Harvard

Dr. Robert T. McCluskey has been appointed S. Burt Wolbach Professor of Pathology by Harvard Medical School. He is also pathologist-in-chief at the Children's Hospital Medical Center.

Medicolegal Report

Appendicitis Misdiagnosis Is Not Penalized

Medical Tribune Report

CHICAGO—A physician who misdiagnosed appendicitis as tonsillitis was not negligent, the Supreme Court of Iowa ruled, noting that the symptoms and x-ray findings were consistent with both diseases.

The patient, a five-year-old child, had vomiting, abdominal pain in the lower right side, and a temperature of 101° F. and was brought to the hospital by her mother. She told the examining physician, who had not seen the child before, that her daughter had appendicitis, but the physician, after examination and the taking of x-rays, made a diagnosis of tonsillitis and sent the child home with medication.

On the seventh day of illness the child was admitted to the hospital, still complaining of stomach pain, and, after a blood test and x-rays, underwent surgery, which disclosed a ruptured appendix and peritonitis. The infection was drained, and, two months later, the appendix was removed. About a month later, tha child was brought to the physician for treatment of a penicillin reaction and a bowel obstruction.

Child's Father Brought Suit

The child's father brought action for malpractice against the physician, his partnership, and the hospital, and the trial court directed a verdict for the physician and other parties, according to the report on the case by the general counsel of the American Medical Association. The father appealed the verdict.

The physician testified that at the first hospital visit, when he had seen the patient for about 10 minutes, he had examined her stomach without finding sufficient signs for a diagnosis of appendicitis. He had not got a good look at her tonsils but had noticed that the roof of her mouth was red, and he said that her white blood cell count was 5,000, consistant with tonsillitis.

The radiologist, who had reported to the physician his impression from the x-rays that there was localized reflex ileus secondary to appendicitis, testified on the difference between an impression and a diagnosis, and he stated that many disorders in addition to appendicitis could be consistent with reflex ileus, including tonsillitis.

The court said that a physician does not insure the correctness of his diagnosis and that in the present case laymen could not conceive of the complex nature of the diagnostic problem. It held that there was no evidence of incorrect interpretation of the x-rays and that the physician had no duty to advise the parents that the condition seen on the x-rays was also consistent with appendicitis.

It further held that the physician and the radiologist were independent contractors, not hospital employees, and the hospital was not required to inform the patient of the radiologist's impression. The radiologist's reports were made to the physician who was responsible to the parents for the proper handling of the case. (*Shirey v. Surgical Associates* [186 N.W. 2d 658 (Iowa Sup. Ct., May 5, 1971)].)

MEDICAL MEETING SCHEDULE

Domestic Meetings

Oct. 18-22 ...American College of Surgeons, *Atlantic City, N.J.*
Oct. 18-22 ....Society for Applied Spectroscopy, *St. Louis*
Oct. 19-22 ...American Society for Microbiology, *Atlantic City, N.J.*
Oct. 21-23 ....American Academy of Clinical Toxicology, *Philadelphia*
Oct. 21-23 ....Nevada State Medical Association, *Las Vegas*
Oct. 22-30 ....American Society of Clinical Pathologists, *Boston*
Oct. 23-30 ...College of American Pathologists, *Boston*
Oct. 25-28 ....National Practice Management and Investment Seminar, 45th Annual Meeting, *Honolulu*
Oct. 25-27 ...Eastern Orthopaedic Association, *White Sulphur Springs, W. Va.*
Oct. 24-28 ...American College of Chest Physicians, *Philadelphia*
Oct. 24-30 ...American College of Gastroenterology, *Atlanta, Ga.*
Oct. 26-27 ....New York State Health Department, Birth Defects Institute, Second Symposium on "Hereditary and Society," *Albany*
Oct. 27-30 ....Gerontological Society, *Houston, Tex.*
Oct. 27-30 ....American Urological Association, Mid-Atlantic Section, *Williamsburg, Va.*
Oct. 27-30 ....National Hemophilia Foundation, *Cleveland*
Oct. 29-30 ....American Medical Society on Alcoholism, *Baltimore*
Oct. 29-31 ....American Society of Therapeutic Radiologists, *Phoenix, Ariz.*
Oct. 29-Nov. 1 ....Association of American Medical Colleges, *Washington*
Oct. 30 .....Society of Teachers of Family Medicine, *Washington*
Oct. 30-Nov. 4 ....American Medical Tennis Association, *Las Vegas, Nev.*
Oct. 31-Nov. 3 ....Academy of Psychosomatic Medicine, 16th Annual Meeting, *Sarasota, Fla.*